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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,724	03/30/2004	David Donovan	200311257-1	8791

22879 7590 08/02/2006

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EXAMINER

NGUYEN, LAMSON D

ART UNIT	PAPER NUMBER
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2861

DATE MAILED: 08/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/814,724	Applicant(s) DONOVAN ET AL.	
	Examiner Lamson D. Nguyen	Art Unit 2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Restriction election dated 05/22/06.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 12, 13, 15 and 18-33 is/are rejected.
- 7) ☒ Claim(s) 10-11, 14, 16-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/13/05; 03/30/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7, 9, 12-13, 15, 18-27, and 30-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Fujimori (US 2003/0007024).

Fujimori teaches a printing method, program storage device, apparatus comprising:

Claims 1, 25, 26, 30, 33 and 34:

- obtaining image data defining an image portion and including data elements defining a first subset and a second subset of areas of the image portion having one or more lesser amounts and one or more greater amounts, respectively, of a colorant (figures 6a-g teach subsets or areas of an image, wherein in pass 1 the dots representing pixels are small, whereas in pass 2 and pass 3, the dots representing pixels are larger); and
- forming the image portion by placement of the colorant onto a medium during a set of overlapping passes so that the first subset of the areas is formed by at least one of (a) a subset of the overlapping passes and (b) a predefined

subset of a plurality of structures available for placing the colorant (figures 6a-g teach a plurality of passes, wherein pass 2 and pass 3 would have overlapping pixels)

Claim 2:

- wherein each data element includes a data value defining an amount of the colorant, and wherein the image data is in a contone form (figures 6a-g), the method further comprising analyzing the contone form of the image data to identify a subset of the data elements having data values corresponding to a subset of permissible values (figures 6a-g teach certain size of an ink drops is to be printed at a certain pass) , and wherein the subset of the data elements corresponds to the first subset of the areas (figure 6b teaches first subset of dots are to be printed in the first pass)

Claim 3:

- wherein the structures are a plurality of printheads, and wherein forming is performed so that the first subset of the areas is formed by a subset of the plurality of printheads (figure 4)

Claim 4:

- wherein the structures are a plurality of nozzles, and wherein forming includes forming the first subset of the areas with a predefined subset of the plurality of nozzles (figures 6a-d)

Claim 5:

- wherein one printhead is available to place the colorant, and wherein forming includes forming the first subset of the areas with the one printhead during the subset of overlapping passes (figure 4 teaches printhead; figures 6a-g teaching printing passes)

Claim 6:

- wherein obtaining includes obtaining image data corresponding to an output swath of the colorant (figure 1 teaches image data being received to print an image)

Claim 7:

- distributing the image to pass assignments corresponding to the set of overlapping passes, and wherein forming includes placing the colorant during the set of overlapping passes according to the pass assignments (figures 6a-g)

Claim 9:

- wherein each data element has a data value defining an amount of the colorant, and wherein distributing includes examining the image data to identify a subset of the data elements having data values defining the one or more lesser amounts of the colorant, and wherein distributing is performed after examining (figure 9a teaches bit values of 0 or 1 to determine the size of an inkdrop)

Claim 12:

- wherein obtaining print data includes obtaining print data in a binary halftone form (figure 1, halftone module 99)

Claim 13:

- obtaining image data defining an image portion and including data elements, each data element corresponding to an area of the image portion and having a data value selected from a set of three or more permissible values and corresponding to an amount of a colorant of the area, data values selected from a subset of the permissible values corresponding to a subset of the areas (figures 6a-g teach different passes corresponding to three different sized dots)

- forming the image portion by placement of the colorant onto a medium during each of a set of overlapping passes so that the subset of the areas is formed by at least one of (a) a subset of the overlapping passes and (b) a predefined subset of structures available for placing the colorant (figures 6a-g teach printing in different passes)

Claim 15:

- wherein forming is performed with one printhead (figures 6b and d)

Claim 18:

- wherein obtaining includes obtaining image data corresponding to an output swath of the colorant (figure 1)

Claim 19:

- obtaining print data defining an image portion and including data elements, the data elements defining a first subset and a second subset of the areas having one or more lesser amounts and one or more greater amounts, respectively, of a colorant (figures 6a-g teach areas of small dots, medium dots, and large dots)
- forming the image portion by placement of the colorant onto a print medium during a set of overlapping passes of one or more printheads, so the first subset of the areas is formed by fewer of the overlapping passes than the

second subset of the areas (figure 6b, d, and f teach printing pass of different sized dots, wherein figure 6g teach combined passes of pass 1 and 3 to print an image)

Claim 20:

- wherein the first subset of the areas is formed by one pass of one printhead (figures 6b,d, and f)

Claim 21:

- the second subset of the areas is formed by colorant placement from each of a set of printheads during one pass of each printhead (figure 12g)

Claim 22:

- analyzing the print data to identify the first and second subsets of the areas, and distributing portions of the print data to a set of pass assignments corresponding to the set of overlapping passes based on analyzing (figures 6a-g determines which pass will take on the size of the ink dots)

Claim 23:

- wherein the fewer passes are used to form a portion of the second subset of the areas (figures 6b,d,f teach only one pass to print, whereas 6g requires both pass 1 and pass 3)

Claim 24:

- wherein obtaining includes obtaining print data including other data elements corresponding to areas of the image portion having none of the colorant (figures 6a-f teach between the dots represented by the white squares corresponding to having no colorant being printed)

Claim 27:

- wherein the data distribution mechanism is configured so that the first subset of the areas is formed by one pass (figures 6b,d, and f)

Claim 31:

- wherein the one or more image forming devices include one or more printheads (figure 4)

Claim 32:

- wherein the one or more image forming devices include at least two image forming devices (figure 4 teaches a plurality of printheads)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori in view of Rosen et al. (6,543,871).

Fujimori teaches all claimed features of the invention except:

- (claim 8) applying one or more predefined masks to the image data
- (claim 28) wherein the data distribution mechanism includes one or more predefined masks configured to create the set of pass assignments by application of the one or more predefined masks to the image data
- (claim 29) a data analysis mechanism configured to identify a subset of the data elements corresponding to the first subset of the areas, wherein the data distribution mechanism is configured to create pass assignments after operation of the data analysis mechanism

It is well-known in the art of inkjet printing method to utilize printmasks to manipulate printing in a particular printing scan or pass, as taught by Rosen et al. (figure 1 teaches mask generator; figures 4 teach various printmasks).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Fujimori to incorporate the

teaching of printmasks taught by Rosen et al for the purpose of minimizing ink bleeding to improve print quality.

Allowable Subject Matter


Claims 10-11, 14, 16-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lamson D. Nguyen whose telephone number is 571-272-2259. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vip Patel can be reached on 571-272-2458. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2861

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



LAMSON NGUYEN
PRIMARY EXAMINER
07/18/06